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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,752	01/09/2002	Victor F. Petrenko	392150	7273
7590 02/24/2005				
Thomas Swenson Lathrop & Gage L.C. Suite 300 4845 Pearl East Circle Boulder, CO 80301			EXAMINER PASCHALL, MARK H	
			ART UNIT 3742	PAPER NUMBER
DATE MAILED: 02/24/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/043,752	<b>Applicant(s)</b> PETRENKO	
	<b>Examiner</b> Mark H Paschall	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on papers filed 11-04-04.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 18-32 is/are rejected.
- 7) ☒ Claim(s) 12-17 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-04-04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: The last line of page 13 is incomplete and should have been carried through to page 14, but is missing. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10,18-32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the instant Background of the Invention on page 2 or the Gemini article pp 1-3, December 1996. both the instant background and the Gemini article set forth power lines which operate at high voltage (typically 200KEV at frequency of 60 hz) , in air. It is common knowledge that ice can form and corona and plasma discharges can occur, with moisture being a catalyst. Power lines covered with ice are seasonally occurring and a small layer of air between the ice and the current carrying conductors would anticipate Applicant's claimed structure. Likewise the Gemini article anticipates the claimed invention merely by depicting high-tension wires, which conventionally ice over seasonally. As per claim 2 , ice would be a conductive layer. Air is the gas between

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the ice and the current carrying conductors. As per claims 8,9 the called for parameters are standard parameters for power lines in the U.S. As per claim 10 air is surrounding conventional power lines. Note that dependent on the thickness of the air layer beneath the ice, corona or plasma discharge would occur.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the disclosed background of the instant invention on page 2 or the Gemini article pp 1-3. Both citations above teach the claimed invention as naturally occurring during icing conditions but do not specifically state use of a switch as per claim 15, nor state thickness of the gas layer of .5-10mm. However, if power was off and then turned on, a switch to effect the same would obviously be used and the called for layer is obviously among the widely varying naturally occurring layer thicknesses between formed ice and the conductor.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the disclosed background of the invention or the Gemini article set forth supra, in view of UK 087'. In view of UK 087' teaching that non conductive material can cover joints between the insulator and conductor in power lines to prevent discharge and hence prevent breakdown of the insulation on the conductor, it would have been obvious to

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modify the disclosed background system or the Gemini article system with a finite non-conductive shell over power line portions, to enhance the longevity of the insulative protection of the line conductors.

### ***Allowable Subject Matter***

Claims 12- and 33 are 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach the layer as comprising gas filled balls nor a flexible band containing the gas filled layer, nor does the prior art teach a conductive shell surrounding the ice and the conductor.

### ***Response to Arguments***

Applicant's arguments filed 11-04-04 have been fully considered but they are not persuasive. Applicant's remarks advance that the ice would freeze on the power line and there would not be an air layer to effect a plasma. However, the ice is not totally layered to the conductor as evidenced by plasmas or coronas, which appear. Also the case in which the ice starts to melt and separate clearly would produce an air gap between the power conductor and the ice which could be ionized to a plasma. For these reasons the rejection of such claims is proper. Applicant's claims set forth no structure other than that naturally occurring on power conductors. Applicant's own disclosure sets

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forth ice as a conductor, and applicant has added no further structure to distinguish the claims from that naturally . Note that the gas filled layer would comprise the layer of air between the conductor and ice, which is spaced from the conductor, as per claim 10. Claims 8 and 9 merely mention frequencies and power ranges that are common in the US. As per claim 11 the gas filled layer would certainly fall within the claimed range as the ice is melting and separating from the conductor, as does naturally occur. Claims 12 –14 set forth an actual outer conductive shell and are allowable for that reason. The same reasons of rejection set forth above pertain to claims 18-32. Claim 33 depicts the gas layer as including conductive metal containing material and is objected to for that reason. In conclusion, Applicant's claims, which are rejected above merely, describe what naturally occurs on power lines and the rejection of the same is proper .

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

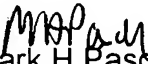
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark H Paschall whose telephone number is 703 308-1642. The examiner can normally be reached on 7am - 3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (703) 305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Mark H Paschall  
Primary Examiner  
Art Unit 3742

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